

AMENDMENTS

In the Claims:

Please cancel claims 1-20.

Please add the following claims:

21. A method of analyzing a power line to increase the power handling capability of the power line comprising:

providing data of an existing power line configured to transmit electrical energy, the existing power line being configured according to initial design parameters and comprising a conductor supported by a plurality of supports;

providing a first model of the existing power line configured according to the initial design parameters using the data;

analyzing the first model of the existing power line at an increased operating condition to identify a violation of the conductor responsive to the increased operating condition; and

after the analyzing, altering the initial design parameters to provide a second model of the existing power line configured according to modified design parameters different than the initial design parameters to provide a design having increased power handling capability of the conductor.

22. The method according to claim ¹21 wherein the providing data comprises providing data of the existing power line configured according to the initial design parameters comprising a location of at least one clamp relative to the conductor, and wherein the altering comprises altering the position of the at least one clamp relative to the conductor.

23. The method according to claim ³~~22~~ wherein the altering the position comprises altering to avoid at least one of a clearance violation and a swing violation.

24. The method according to claim ⁴~~24~~ wherein the altering comprises removing a portion of the conductor.

25. The method according to claim ⁵~~25~~ wherein the providing the first model comprises analyzing the position of insulators relative to the conductor to resolve forces exerted upon the insulators in a static equilibrium state to determine equilibrium points of a plural span system.

26. The method according to claim ⁶~~26~~ wherein the providing the first model comprises analyzing movement of insulators coupled with the conductor and stiffness of individual supports.

1 27. The method according to claim 21 wherein the providing
2 data comprises providing data of a plurality of spans of the existing
3 power line, and the altering comprises altering individual ones of the
4 spans.

5
6 28. The method according to claim 21 wherein the providing
7 data comprises providing data of a plurality of spans of the existing
8 power line, and the providing the first model comprises providing
9 equilibrium points for the spans.

10
11 29. The method according to claim 21 wherein the providing
12 data comprises providing data of a plurality of spans of the existing
13 power line, and the providing the first model comprises distributing error
14 throughout the existing power line to provide a steady state first model.

15
16 30. The method according to claim 21 wherein the providing
17 data comprises providing data of a plurality of spans of the existing
18 power line, and the altering comprises altering a span having a violation.

19
20 31. The method according to claim 21 wherein the providing
21 data comprises providing data of a plurality of spans of the existing
22 power line, and the altering comprises altering a span adjacent to
23 another span having a violation.
24

1 ¹¹32. The method according to claim ¹⁰31 wherein the altering
2 comprises altering the span adjacent the another span having a tension
3 violation.

4
5 ¹²33. The method according to claim ¹31 wherein the providing the
6 first model comprises providing without use of the Ruling Span concept.

7
8 ¹³34. The method according to claim ¹31 wherein the providing
9 data comprises providing data of the existing power line according to
10 initial design parameters comprising original design parameters.

11
12 ¹⁴35. The method according to claim ¹31 wherein the providing
13 data comprises providing data of the existing power line using survey
14 information obtained from the existing power line in the field.

15
16 ¹⁵36. The method according to claim ¹31 further comprising
17 analyzing the second model of the existing power line at an increased
18 operation condition.

19
20 ~~37. The method according to claim 21 further comprising~~
21 ~~analyzing the second model with respect to current safety code.~~
22
23
24

38. A method of analyzing a power line to increase the power handling capability of the power line comprising:

providing data of an existing power line configured to transmit electrical energy, the existing power line being configured according to initial design parameters and comprising a conductor coupled with a plurality of insulators and supported by a plurality of supports defining a plurality of spans;

providing a first model of the existing power line configured according to the initial design parameters using the data, the providing the first model comprising providing a steady state first model of the existing power line including resolving forces in a static equilibrium calculation;

analyzing the first model of the existing power line at an increased operating condition to identify a violation of the conductor responsive to the increased operating condition;

after the analyzing, altering the initial design parameters to provide a second model of the existing power line configured according to modified design parameters different than the initial design parameters to provide a design having increased power handling capability of the conductor, wherein the altering comprises at least one of adjusting a location of clamp relative to the conductor and removing a portion of the conductor; and

analyzing the second model of the existing power line at an increased operating condition.

22 39. The method according to claim ²¹38 wherein the providing data comprises providing data of the existing power line according to initial design parameters comprising original design parameters.

40. An article of manufacture comprising:
a computer usable medium having computer useable code embodied therein and configured to cause a processor to perform steps comprising:

receiving data of an existing power line configured to transmit electrical energy, the existing power line being configured according to initial design parameters and comprising a conductor supported by a plurality of supports;

providing a first model of the existing power line configured according to the initial design parameters using the data;

analyzing the first model of the existing power line at an increased operating condition to identify a violation of the conductor responsive to the increased operating condition; and

after the analyzing, altering the initial design parameters to provide a second model of the existing power line configured according to modified design parameters different than the initial design parameters to provide a design having increased power handling capability of the conductor.